IN THE CLAIMS:

Please amend claims

1. (currently amended) A machine-readable medium having stored thereon instructions, which when executed by one or more processors, cause said one or more processors to perform a method, said method comprising:

a) creating a string that models a trace having cross-capacitance, said string having a collection of lumped elements including cross capacitors;

b) reducing said string to a pi model, said pi model having a pair of cross capacitors; and

c) simulating the application of an applied noise voltage to at least one of said cross capacitors.

2. (previously presented) The machine-readable medium of claim 1 wherein said reducing said string to a pi model further comprises reducing the number of capacitors and resistors in said string.

3. (original) The machine-readable medium of claim 2 wherein said reducing said string to a pi model further comprises reducing six capacitors and two resistors in said string to four capacitors and one resistor.

4. (original) The machine-readable medium of claim 3 wherein said reduction of six resistors and four capacitors is performed according to an Elmore influenced reduction method.

5. (original) The machine-readable medium of claim 3 wherein said reduction of resistors and capacitors is performed according to an O'Brien/Savarino influenced reduction method.

6. (original) The machine-readable medium of claim 1 wherein said string further comprises a number of paths, said reduction of said string to a pi model performed for one of said paths.

7. (original) The machine-readable medium of claim 1 wherein said application of a noise voltage further comprises applying a voltage ramp as said applied noise voltage.

8. (original) The machine-readable medium of claim 7 wherein the ramp time of said voltage ramp is multiplied by a factor to correct for the characteristics of an actual driving transistor.

9. (previously presented) The machine-readable medium of claim 1 wherein said instructions are such that said reducing said string to a pi model may be performed

on a first apparatus and said creating a string that models a trace may be performed on a second apparatus.

10. (previously presented) The machine-readable medium of claim 1 wherein said method further comprises adding a resistor to said pi model as a linear source model.

11. (previously presented) The machine-readable medium of claim 1 said method further comprises allowing a user to observe a noise voltage waveform on a victim node of said pi model.

12. (previously presented) The machine-readable medium of claim 1 wherein said method further comprises calculating the peak noise voltage on a victim node of said pi model caused by said applied noise voltage.

13. (previously presented) The machine-readable medium of claim 1 wherein said method further comprises applying a second applied noise voltage to a second cross capacitor of said cross capacitors.

14. (original) The machine-readable medium of claim 13 wherein said applied noise voltage and said second applied noise voltage are voltage ramps having their end or ramp times in phase.

15. (previously presented) The machine-readable medium of claim 13 wherein said method further comprises calculating the peak noise caused by said applied noise voltage and said second applied noise voltage at a source point of said pi model.

16. (previously presented) The machine-readable medium of claim 13 wherein said method further comprises calculating the peak noise caused by said applied noise voltage and said second applied noise voltage at a load point of said pi model.

17. (previously presented) The machine-readable medium of claim 1 wherein said reducing said string to a pi model further comprises reducing said string to a reduced string then reducing said reduced string to a simple string having resistors in series and capacitors in parallel, said capacitors separated by one of said resistances, then reducing said simple string to a pi-model.

18. (currently amended) A machine-readable medium having stored thereon instructions, which when executed by one or more processors, cause said one or more processors to perform a method, said method comprising:

a) creating a string that models a trace having cross-capacitance, said string having a collection of lumped elements, at least one of said lumped elements having a plurality of cross capacitors on a node, each of said cross capacitors corresponding to a different proximate trace;

b) adding said plurality of cross capacitors together to form a reduced string;

c) reducing said reduced string to a pi model, said pi model having a cross capacitor; and

d) simulating the application of an applied noise voltage to said cross capacitor.

19. (previously presented) The machine-readable medium of claim 18 wherein said reducing said reduced string to a pi model further comprises reducing the number of capacitors and resistors in said reduced string.

20. (previously presented) The machine-readable medium of claim 19 wherein said reducing said reduced string to a pi model further comprises reducing six capacitors and two resistors in said string to four capacitors and one resistor.

21. (original) The machine-readable medium of claim 20 wherein said reduction of six resistors and four capacitors is performed according to an Elmore influenced reduction method.

22. (original) The machine-readable medium of claim 20 wherein said reduction of resistors and capacitors is performed according to an O'Brien/Savarino influenced reduction method.

23. (original) The machine-readable medium of claim 18 wherein said string further comprises a number of paths, said reduction of said string to a pi model performed for one of said paths.

24. (previously presented) The machine-readable medium of claim 18 wherein said applying a noise voltage further comprises applying a voltage ramp as said applied noise voltage.

25. (original) The machine-readable medium of claim 24 wherein said voltage ramp further comprises an equivalent ramp time that approximates the worst case noise caused by said plurality of proximate traces.

26. (previously presented) The machine-readable medium of claim 18 wherein said reducing said reduced string to a pi model may be performed on a first apparatus and said creating a string that models a trace may be performed on a second apparatus.

27. (previously presented) The machine-readable medium of claim 18 wherein said reducing said reduced string to a pi model further comprises reducing said reduced string to a simple string then reducing said simple string to a pi-model.

28. (currently amended) An apparatus, comprising:

a computer having design tool software, said design tool software comprised of instructions that when executed cause a method to be performed, said method comprising:

a) recognizing a string that models a trace having cross-capacitance, said string having a collection of lumped elements including cross capacitors;

b) reducing said string to a pi model, said pi model having a pair of cross capacitors; and

c) simulating the application of an applied noise voltage to at least one of said cross capacitors.

29. (previously presented) A machine-readable medium having stored thereon instructions which when executed by one or more processors cause said one or more processors to perform a method, said method comprising:

calculating a plurality of incremental values from an overall applied noise voltage waveform and simulating the application of each of said plurality of incremental values to a cross capacitor, said cross capacitor one of a pair of cross capacitors associated with a pi model, said pi model reduced from a string having more than a pair of cross capacitors.

30. (previously presented) The machine-readable medium of claim 29 wherein said method further comprises assembling a plurality of observed noise voltages from the simulation of the application of each of said discrete samples.

31. (previously presented) The machine-readable medium of claim 30 wherein said method further comprises displaying an overall observed noise voltage waveform produced from said plurality of observed noise voltages.

32. (original) The machine-readable medium of claim 29 wherein said overall applied noise voltage waveform is a ramp.

33. (currently amended) A method, comprising:

a) creating a string that models a trace having cross-capacitance, said string having a collection of lumped elements including cross capacitors;

b) reducing said string to a pi model, said pi model having a pair of cross capacitors; and

c) simulating the application of an applied noise voltage to at least one of said cross capacitors.

34. (previously presented) The method of claim 33 wherein said reducing said string to a pi model further comprises reducing the number of capacitors and resistors in said string.

35. (original) The method of claim 34 wherein said reducing said string to a pi model further comprises reducing six capacitors and two resistors in said string to four capacitors and one resistor.

36. (original) The method of claim 35 wherein said reduction of six resistors and four capacitors is performed according to an Elmore influenced reduction method.

37. (original) The method of claim 35 wherein said reduction of resistors and capacitors is performed according to an O'Brien/Savarino influenced reduction method.

38. (original) The method of claim 33 wherein said string further comprises a number of paths, said reduction of said string to a pi model performed for one of said paths.

39. (original) The method of claim 33 wherein said application of a noise voltage further comprises applying a voltage ramp as said applied noise voltage.

40. (original) The method of claim 39 wherein the ramp time of said voltage ramp is multiplied by a factor to correct for the characteristics of an actual driving transistor.

41. (previously presented) The method of claim 33 wherein said reducing said string to a pi model is performed on a first apparatus and said creating a string that models a trace is performed on a second apparatus.

42. (previously presented) The method of claim 33 further comprising adding a resistor to said pi model as a linear source model.

43. (previously presented) The method of claim 33 further comprising observing noise voltage on a victim node of said pi model.

44. (previously presented) The method of claim 33 further comprising calculating the peak noise voltage on a victim node of said pi model caused by said applied noise voltage.

45. (previously presented) The method of claim 33 further comprising applying a second applied noise voltage to a second cross capacitor of cross capacitors.

46. (original) The method of claim 45 wherein said applied noise voltage and said second applied noise voltage are voltage ramps having their end or ramp times in phase.

47. (previously presented) The method of claim 45 further comprising calculating the peak noise caused by said applied noise voltage and said second applied noise voltage at a source point of said pi model.

48. (previously presented) The method of claim 45 further comprising calculating the peak noise caused by said applied noise voltage and said second applied noise voltage at a load point of said pi model.

49. (previously presented) The method of claim 33 wherein said reducing said string to a pi model further comprises reducing said string to a reduced string then reducing said reduced string to a simple string having resistors and capacitors in parallel, said capacitors separated by one of said resistors then reducing said simple string to a pi-model.

50. (currently amended) A method, comprising:

a) creating a string that models a trace having cross-capacitance, said string having a collection of lumped elements, at least one of said lumped elements having a plurality of cross capacitors on a node, each of said cross capacitors corresponding to a different proximate trace;

b) adding said plurality of cross capacitors together to form a reduced string;

c) reducing said reduced string to a pi model, said pi model having a cross capacitor; and

d) simulating the application of an applied noise voltage to said cross capacitor.

51. (previously presented) The method of claim 50 wherein said reducing said reduced string to a pi model further comprises reducing the number of capacitors and resistors in said reduced string.

52. (previously presented) The method of claim 51 wherein said reducing said reduced string to a pi model further comprises reducing six capacitors and two resistors in said string to four capacitors and one resistor.

53. (original) The method of claim 52 wherein said reduction of six resistors and four capacitors is performed according to an Elmore influenced reduction method.

54. (original) The method of claim 52 wherein said reduction of resistors and capacitors is performed according to an O'Brien/Savarino influenced reduction method.

55. (currently amended) The method~~machine-readable medium~~ of claim 50 wherein said string further comprises a number of paths, said reduction of said string to a pi model performed for one of said paths.

56. (previously presented) The method of claim 50 wherein said applying a noise voltage further comprises applying a voltage ramp as said applied noise voltage.

57. (original) The method of claim 56 wherein said voltage ramp further comprises an equivalent ramp time that approximates the worst case noise caused by said plurality of proximate traces.

58. (previously presented) The method of claim 50 wherein said reducing said reduced string to a pi model is performed on a first apparatus and said creating a string that models a trace is performed on a second apparatus.

59. (previously presented) The method of claim 50 wherein said reducing said reduced string to a pi model further comprises reducing said reduced string to a simple string then reducing said simple string to a pi-model.

60. (currently amended) A method, comprising:

calculating a plurality of incremental values from an overall applied noise voltage waveform and simulating the application of each of said plurality of incremental values to a cross capacitor, said cross capacitor one of a pair of cross capacitors associated with a pi model, said pi model reduced from a string having cross-capacitance, said string having more than a pair of cross capacitors.

61. (previously presented) The method of claim 60 further comprising assembling a plurality of observed noise voltages from the simulation of the application of each of said incremental values.

62. (previously presented) The method of claim 61 further comprising displaying an overall observed noise voltage waveform produced from said plurality of observed noise voltages.

63. (original) The method of claim 60 wherein said overall applied noise voltage waveform is a ramp.